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PATENT APPLICATION

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Inventor(s): Siew Fei LEE

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Title: A Joy-Dial For Providing Input Signals To A Device

Mail Stop Appeal Brief-Patents
Commissioner For Patents
PO Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF APPEAL BRIEF

Sir:

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on **June 10, 2005**.

The fee for filing this Appeal Brief is (37 CFR 1.17(c)) $500.00.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

( ) (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d) for the total number of months checked below:

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( ) The extension fee has already been filled in this application.

( ) (b) Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

Please charge to Deposit Account **08-2025** the sum of **$500.00**. At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 CFR 1.25. Additionally please charge any fees to Deposit Account 08-2025 under 37 CFR 1.16 through 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees. A duplicate copy of this sheet is enclosed.

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Number of pages:

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Signature:

Rev 12/04 (Aplbrief)

Respectfully submitted,

Siew Fei LEE

By _____

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I. **Real Party in Interest**

The present application is assigned to Hewlett Packard Development Company L.P.

II. **Related Appeals and Interferences**

The Appellant's legal representative, or assignee, does not know of any other appeal or interferences which will affect or be directly affected by or have bearing on the Board's decision in the pending appeal.

III. **Status of Claims**

Claims 1-4, 7, 8, and 10-23 are pending in the application and are being appealed. Claims 5, 6 and 9 have been canceled.

IV. **Status of Amendments**

No amendment after Final rejection has been filed.

V. **Summary of Claimed Subject Matter**

Appellant's specification discloses a joy-dial for providing input signals to a device, and an information device having at least one of such joy-dial, e.g. a portable digital assistance (PDA). In one embodiment, the joy-dial includes: a first and a second x-axis inputs (D, B); a first and a second y-axis inputs (A, C); a first and a second directional inputs (I, J); a joy pad (18); an elastically deformable diaphragm (20) located below the joy pad corresponding to each of the x-axis and y-axis inputs; and a contact (22) located below and associated with each of the diaphragms and arranged so that pressure applied to the joy pad at one of the x-axis or y-axis inputs results in deformation of the corresponding diaphragm and closure of the associated contact (page 4, lines 23-29; page 5, lines 4-23; page 6, lines 21-28). The first and second directional inputs (I, J) are operable by rotating the joy pad in a respective clockwise and anti-clockwise direction about a z-axis (page 5, lines 25-29). In another embodiment, the joy-dial further includes a central input (K) so that pressure applied to the central input results in deformation of all the diaphragms located below the x-axis and y-

axis inputs and closures of their associated contacts (page 5, lines 1-2; page 7, lines 10-20). FIGS. 2-4 schematically illustrate the various inputs of the joy-dial. FIG. 5 shows an arrangement for the joy pad (18) in accordance with one embodiment.

The foregoing features are encompassed by independent claims 1, 20 and 23.

VI. Grounds of Rejection to be Reviewed on Appeal

1. Whether Claims 1-4, 7, 8, 10-22 are patentable over Thorne in view of Date under 35 U.S.C. §103(a)?

2. Whether Claim 23 is patentable over Thorne in view of Date and Palisek under 35 U.S.C. §103(a)?

VII. Argument

A. The 35 U.S.C. 103 rejection based on the combination of Thorne and Date

Claims 1-4, 7, 8, 10-22 were rejected under 35 U.S.C. 103(a) as being unpatentable over Thorne (US 5,670,955) in view of Date (US 5,498,843).

Claim 1 recites a joy-dial having a first and second x-axis input, a first and second y-axis input, a first and second directional input, a joy pad, an elastically deformable diaphragm under the joy pad corresponding to each of the x-axis and y-axis inputs, and a contact below each diaphragm, wherein "said first and second directional inputs being operable by rotating the joy pad in a respective clockwise and anti-clockwise direction about a z-axis." In other words, the first directional input is operated by rotating the joy pad in a clockwise direction about a z-axis, and the second directional input is operated by rotating the joy pad in an anti-clockwise direction about the z-axis.

Thorne teaches a thumb-pad input device that enables a user to generate direction and speed of a cursor on a screen. Many contacts are arranged in a circumferential manner below the thumb-pad. Each contact is paired with a corresponding switch. When the user presses the thumb-pad, he closes one or more switches. The number of closed switches corresponds to the magnitude of the force applied to the thumb-pad, and hence, the speed of the cursor on the screen. The middle closed switch of the left-most (most counter-clockwise) closed switch and the right-most (most clockwise) closed switch corresponds to the direction of the cursor.

Date teaches a control key device. The device includes a casing, a key member, a contact member, a resilient member and a substrate. The casing has a dome-shaped portion having a top curved surface and a through-hole at the centre. The resilient member is provided on the substrate. The substrate has electrical contacts, and the resilient member have bulges at positions corresponding with the contacts on the substrate. The resilient member also a contact at the underside surface of each bulge, so that it electrically connects with the contact of the substrate when deformed. The key member is connected to the contact member via the through-hole of the casing. The key member has a sliding surface facing the top curved surface of the domed-shaped portion, so that it can slide along the top curved surface when tilted. The contact pressing member has legs at positions corresponding to the bulges of the resilient member for deforming the bulges.

Appellant submits that Thorne does not teach that the joy pad (i.e., thumb-pad) is rotated in the clockwise or anti-clockwise direction about the z-axis to operate the first and second directional inputs as recited in Claim 1. On the contrary, Thorne teaches that the user presses down on the pad for closing the contacts (see col 2 line 26, col 4, lines 2-5). Furthermore, the pad of Thorne is secured to a board member by an annular member (see col 4, lines 57-61 and Fig. 4). Therefore, it is apparent that the pad is prevented by the annular

member from rotating in the clockwise and anti-clockwise direction about the z-axis.

The Final Office Action cited a portion of the Thorne reference (col. 6, lines 58-62), which states "assume that the switch 0 in FIG. 6 represents the most counter-clockwise switch and switch 4 the most clockwise switch in an arc of closed switches 0 through 4." It appears that the Office Action considered this cited portion suggests the clockwise and anti-clockwise rotations of the round pad 8 about the z-axis. However, the switches 0 and 4 only represent the endpoints of the closed switches (see col. 6, lines 26, of the Thorne reference). This only means that the thumbpad is pressed in such a way that the switches 0-4 are closed. The thumbpad is not rotated in the clockwise or anti-clockwise direction about the z-axis as recited in Claim 1.

The Office Action relied on Date for the teaching of an "elastically deformable diaphragm." However, Date fails to cure the deficiency of Thorne with respect to the first and second directional inputs as recited in Claim 1. More specifically, Date does not teach that the joy pad is rotated in the clockwise or anti-clockwise direction about the z-axis to operate the first and second directional inputs as recited in Claim 1. On the contrary, Date teaches that an operator pushes the key member to operate the control key device (see col. 2, line 66 – col. 3, line 15, col. 7, lines 9-20). Thus, even if Thorne and Date could have been combined in the manner suggested by the Office Action, the joy-dial as recited Claim 1 would not have resulted. Furthermore, there is no motivation or suggestion to modify the thumbpad input device of Thorne or the control key device of Date so as to arrive at the joy-dial of Claim 1. As such, the Office Action has failed to establish a *prima facie* case of obviousness and Claim 1 is patentable over the combination of Thorne and Date. Claims 2-4, 7, 8, 10-19 are also patentable over the combination of Thorne and Date at least by virtue of their dependency on Claim 1.

Independent Claim 20 recites an information device having at least one joy-dial, wherein the joy-dial comprises the features of Claim 1, including the first and second directional inputs that are "operable by rotating the joy pad in a respective clockwise and anti-clockwise direction about a z-axis." As discussed above, neither Thorne nor Date discloses the first and second directional inputs of the claimed joy-dial. Thus, Claim 20 is patentable over the combination of Thorne and Date. Claims 21 and 22 are also patentable over the combination of Thorne and Date at least by virtue of their dependency on Claim 20.

B. **The 35 U.S.C. 103 rejection based on the combination of Thorne, Date and Palisek**

Claim 23 was rejected under 35 U.S.C. 103(a) as being unpatentable over Thorne in view of Date and Palisek (US 4,256,931).

Claim 23 includes the features of Claim 1, and further recites a central input, wherein "pressure applied to the central input on the joy pad results in deformation of all the diaphragms located below the x-axis and y-axis inputs and closures of their associated contacts." In other words, when pressure is applied on the central input, all the diaphragms located below the x-axis and y-axis inputs are deformed and all the associated contacts are closed.

Firstly, Thorne does not disclose the first and second directional inputs as recited in Claim 23. As discussed above for Claim 1, Thorne does not teach that the joy pad is rotated in the clockwise or anti-clockwise direction about the z-axis to operate the first and second directional inputs.

Secondly, Date fails to cure the deficiency of Thorne with respect to the first and second directional inputs as recited in Claim 23. The Office Action relied on Date only for the teaching of an "elastically deformable diaphragm."

As recognized by the Office Action, neither Thorne nor Date discloses a central input as recited in Claim 23. The Office Action then relied on Palisek for the teaching of the central input. Applicant submits that Palisek does not disclose that all the contact switches are closed when pressure is applied to the central input as recited in Claim 23.

Palisek teaches a switching control button structure for selectively actuating resilient dome momentary contact switches. The contact switches are mounted on a support surface and arranged in a circumferential manner. The switching control button structure includes a pivot pin which supports a key member in a central position. The key member has wings extending over the contact switches. The contact switches are closed by pressing and tilting the key member in the direction of the selected contact switches. However, Palisek does not disclose that all the contact switches are closed when pressure is applied on the central region of the key member as recited in Claim 23. On the contrary, the key member is pivotally mounted on a pivot at the centre. When a downward force is applied on the key member, the force has to be applied slightly off centre in the direction of one of the key wings to close the selected switch (see col. 3, lines 40-50, of the Palisek reference).

Furthermore, Palisek fails to cure the deficiency of Thorne with respect to the first and second directional inputs as recited in Claim 23. More specifically, Palisek does not teach that the joy pad is rotated in the clockwise or anti-clockwise direction about the z-axis to operate the first and second directional inputs as recited in Claim 23.

Even if the features of Thorne, Date and Palisek could have been combined in the manner suggested by the Office Action, the claimed subject matter would not have resulted because these references, as a combination, fail to teach or suggest all of the claimed limitations. As such, the Office Action has failed to establish a *prima facie* case of obviousness, and accordingly, Claim 23 is patentable over the combination of Thorne, Date and Palisek.

Improper Rejection of Canceled Claim 6

On page 7 (paragraph #6) of the Final Office Action, there is stated a rejection of Claim 6 under 35 U.S.C. §103(a). However, Claim 6 has been canceled and acknowledged as such at paragraph #1 of the Office Action. Because Claim 6 has been canceled, this rejection is considered moot. It appears that this rejection was made by mistake.

VIII. **Claims Appendix**

See the attached Claims Appendix for a copy of the claims involved in the appeal.

IX. **Evidence Appendix**

None

X. **Related Proceedings Appendix**

None

XI. CONCLUSION

Reversal of the final rejection is respectfully requested and a Notice of Allowance is solicited.

Date : August 29 , 2005

Respectfully submitted,

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VIII. CLAIMS APPENDIX

The Appealed Claims

1. (Previously presented) A joy-dial for providing input signals to a device, said joy-dial comprising:

a first and a second x-axis input;

a first and a second y-axis input;

a first and a second directional input;

a joy pad;

an elastically deformable diaphragm located below the joy pad corresponding to each of the x-axis and y-axis inputs;~~,~~ and

a contact located below and associated with each of the diaphragms arranged so that pressure applied to the joy pad at one of the x-axis or y-axis inputs results in deformation of the corresponding diaphragm and closure of the associated contact,

wherein said first and second directional inputs being operable by rotating the joy pad in a respective clockwise and anti-clockwise direction about a z-axis.

2. (Previously presented) A joy-dial according to claim 1, further comprising at least one diagonal input.

3. (Previously presented) A joy-dial according to claim 2 wherein the at least one diagonal input having a corresponding diagonal input position defined between one of the first y-axis and the second x-axis input, the second x-axis input the second y-axis input, the second y-axis input and the first x-axis input and the first x-axis input and the first y-axis input.

4. (Previously presented) A joy-dial according to claim 3 wherein pressure applied to the corresponding diagonal input position on the joy pad results in

deformation of the associated diaphragms of the adjacent x-axis and y-axis inputs and closure of their associated contacts.

5. (Canceled)

6. (Canceled)

7. (Previously presented) A joy-dial according to claim 1 further comprising:

a first and a second directional contact located below the joy pad and between the contacts associated with the x-axis and the y-axis inputs;

an engagement means located below the joy pad and fixedly attached to the underside thereof, wherein during rotation of the joy pad, the engagement means is arranged to push against a biasing means so as to close the first and second directional contacts.

8. (Original) A joy-dial according to claim 7 wherein the biasing means restores the joy pad to a home position in which none of the contacts are closed once pressure applied by the user is removed.

9. (Canceled)

10. (Previously presented) A joy-dial according to claim 1 wherein the joy pad can be rotated substantially 45° in either the clockwise or anti-clockwise direction about the z-axis.

11. (Previously presented) A joy-dial according to claim 1 further comprising a base arranged for attachment to an information device or to a printed circuit board of a device and a cage means arranged to be connected to said base and to locate the joy pad there between.

12. (Previously presented) A joy-dial according to claim 11 wherein ~~the~~a biasing means is located between the joy pad and an upper surface of the base.

13. (Original) A joy-dial according to claim 1 wherein the joy pad is marked to indicate the positioning of the input positions.

14. (Original) A joy-dial according to claim 1 wherein the joy pad has an upper surface which is patterned to enhance grip to the joy pad by the user's finger.

15. (Original) A joy-dial according to claim 1 wherein the joy pad is mounted for pivotal movement on a pivot means.

16. (Original) A joy-dial according to claim 15 wherein the joy pad includes an engaging member on an underside, said engaging member being arranged to engage within a groove formed in an upper surface of said pivot means.

17. (Original) A joy-dial according to claim 16 wherein the engaging member is located in a hollow or aperture formed in the underside of the joy pad.

18. (Original) A joy-dial according to claim 16 wherein the groove is annular so as to enable the joy pad to turn in a clockwise or anti-clockwise direction.

19. (Original) A joy-dial according to claim 1 wherein the joy pad includes at least one thumb rail arranged to aid the user to rotate the joy pad.

20. (Previously presented) An information device having at least one joy-dial, said joy-dial being arranged to provide input signals to the device, said joy-dial comprising:

a first and a second x-axis input;

a first and a second y-axis input;

a first and second directional input;

a joy pad;

an elastically deformable diaphragm located below the joy pad corresponding to each of the x-axis and y-axis inputs; and

a contact located below and associated with each of the diaphragms arranged so that pressure applied to the joy pad at one of the x-axis or a y-axis inputs results in deformation of the corresponding diaphragm and closure of the associated contact,

wherein said first and second directional inputs being operable by rotating the joy pad in a respective clockwise and anti-clockwise direction about a z-axis.

21. (Previously presented) A device according to claim 20 further comprising a microprocessor or the like which is arranged to detect closure of any of the contacts and to interpret such as a logical state change.

22. (Previously presented) A device according to claim 20 further comprising an operating system which is arranged to be informed by the microprocessor of a logical state change and to in turn inform a software application which interprets the information for executing a corresponding or an associated action.

23. (Previously presented) A joy-dial for providing input signals to a device, said joy-dial comprising:

a first and a second x-axis input;

a first and a second y-axis input;

a first and a second directional input;

a central input;

a joy pad;

an elastically deformable diaphragm located below the joy pad corresponding to each of the x-axis and y-axis inputs; and

a contact located below and associated with each of the diaphragms arranged so that pressure applied to the joy pad at one of the x-axis or y-axis inputs results in deformation of the corresponding diaphragm and closure of the associated contact,

wherein said first and second directional inputs being operable by rotating the joy pad in a respective clockwise and anti-clockwise direction about a z-axis, and

wherein pressure applied to the central input on the joy pad results in deformation of all the diaphragms located below the x-axis and y-axis inputs and closures of their associated contacts.

IX. EVIDENCE APPENDIX

NONE

IX. RELATED PROCEEDINGS APPENDIX

NONE